

AMENDMENT TO THE CLAIMS

1. (Currently amended) A method of manufacturing a semiconductor device comprising the steps of:

(a) forming a resin layer over a surface of a semiconductor wafer on which a plurality of semiconductor elements are formed;

(b) forming a through-hole on the resin layer;

(c) first cutting where one of the wafer and the resin layer is cut;

(d) mounting a conductive ball on the through-hole, and connecting the conductive ball with an electrode of the semiconductor element; and

(e) second cutting where the wafer is divided into each piece of a semiconductor device.

2. (Original) The method of manufacturing the semiconductor device of claim 1 wherein the through-hole is formed by laser irradiation.

3. (Original) The method of manufacturing the semiconductor device of claim 1 wherein the first cutting of the resin layer and the through-hole forming are performed by laser irradiation.

4. (Original) The method of manufacturing the semiconductor device of claim 3 wherein the first cutting of the resin layer and forming the through-hole are processed in one process step.

5. (Original) The method of manufacturing the semiconductor device of claim 1 wherein the conductive ball and the electrode of the semiconductor element is connected by soldering.

6. (Original) The method of manufacturing the semiconductor device of claim 1 wherein the conductive ball is a solder ball.

7. (Original) The method of manufacturing the semiconductor device of claim 1 wherein the first cutting of the semiconductor wafer comprises steps of grinding a wafer surface having no semiconductor elements thereon and forming grooves on the ground surface.

8. (Original) The method of manufacturing the semiconductor device of claim 1 wherein the first cutting of the semiconductor wafer comprises steps of forming grooves on a wafer surface on which the semiconductor elements are formed and grinding a wafer surface without the grooves.

9. (Currently amended) A method of manufacturing a semiconductor device comprising the steps of:

forming a resin layer on a semiconductor wafer so as to form a semiconductor structure;

[[and]]

cutting one of said resin layer and said semiconductor wafer along a dividing line into one of a plurality of resin layers on said semiconductor wafer and a plurality of semiconductor wafers on said resin layer, respectively; and

forming a through hole in said resin layer and filling said through hole with solder.

10. (Canceled)

11. (Currently amended) The method of manufacturing a semiconductor device of claim [[10]] 9, further comprising the step of mounting a solder ball on said solder.

12. (Previously presented) The method of manufacturing a semiconductor device of claim 9, further comprising the step of cutting the other one of said resin layer and said semiconductor wafer along said dividing line so as to form a plurality of semiconductor structures.

13. (Previously presented) The method of manufacturing a semiconductor device of claim 9, wherein the step of cutting comprises cutting said resin layer along the dividing line.

14. (Previously presented) The method of manufacturing a semiconductor device of claim 9, wherein the step of cutting comprises cutting said semiconductor wafer along the dividing line.

15. (Previously presented) The method of manufacturing a semiconductor device of claim 9, wherein the step of cutting comprises the step of forming a groove in said semiconductor wafer on one side thereof before the step of forming a resin layer.

16. (Previously presented) The method of manufacturing a semiconductor device of claim 15, wherein the step of forming a resin layer includes filling said groove with a portion of said resin layer.

17. (Previously presented) The method of manufacturing a semiconductor device of claim 16, wherein the step of cutting further comprises grinding said semiconductor wafer on a side opposing said one side so as to reach said groove.

18. (Previously presented) The method of manufacturing a semiconductor device of claim 15, wherein the step of cutting further comprises grinding said semiconductor wafer on a side opposing said one side so as to reach said groove.

19. (Previously presented) The method of manufacturing a semiconductor device of claim 18, further comprising the steps of forming a through hole in said resin layer and filling said through hole with solder.

20. (Previously presented) The method of manufacturing a semiconductor device of claim 19, further comprising the step of mounting a solder ball on said solder.

21. (Previously presented) The method of manufacturing a semiconductor device of claim 18, further comprising the step of cutting the other one of said resin layer and said semiconductor wafer along said dividing line so as to form a plurality of semiconductor structures.

22. (Previously presented) The method of manufacturing a semiconductor device of claim 11, further comprising the step of cutting the other one of said resin layer and said semiconductor wafer along said dividing line so as to form a plurality of semiconductor structures.

23. (Previously presented) The method of manufacturing a semiconductor device of claim 11, wherein the step of mounting a solder ball on said solder is performed after the step of cutting.